

Minutes of Constellation-X FST meeting May 3,4 2001 at SAO

It was commented that we don't seem to have enough time to present everything at these meetings. Maybe we need either a longer meeting (3 days) or we should meet more frequently (maybe every 9 months).

Jean Grady - mission update

We have prioritized the segmented optics technology.

We have built the first very small X-ray calorimeter TES arrays. The energy resolution is still not better than 4 eV in the array.

The technology is ready for flight scale development.

The Atlas V seems to be the optimal launch vehicle (2 launches)

Guideline new start date: 2006

SXT mirrors: need to start flight production in early 2006.

The flight demo will use 6 mandrels (Martin thinks we need to demonstrate the technology with many more mandrels).

New imaging TES approach will allow us to increase our FOV without increasing our electronics.

SXT report

There is a growing uncertainty about the vendor's willingness to provide full shell mandrels.

OAB (Brera, Italy) is investigating ceramic materials.

Gratings - Webster Cash

With off-plane dispersion, we could get a resolution of up to ~5,000

Constellation-X project should study this option

XMM considered off-plane dispersion. Why didn't they use it? Was it for technical or political reasons?

Rick Rothschild - hard X-ray detectors

We may need to calibrate each pixel to address radiation damage. Need an on-board calibration source.

Low Earth orbit study:

190 MeV protons at 5×10^9 protons/cm² caused 7 1/2 % gain shift in cyclotron facility (full exposure)

How long would similar damage take at L2? Months, years?

Solar flares will be a particular problem at L2

Calibration of InFocus

Mirror has 255 shells w/ radius 5-20 cm, 8 m focal length.

On-axis HPD 2.5-2.8 arcmin (limitation is the alignment structure)

Calibration used a collimated pencil beam which was raster scanned across the mirror to measure reflectivity. Raster scans with 4.5 mm diameter CZT detector at various positions